

Table S1. Major ions concentration in the WACB aquifer

	Distance <sup>a</sup>	T	Eh	pH	Ba <sup>2+</sup>	Ca <sup>2+</sup>	Mg <sup>2+</sup>	K <sup>+</sup>	Rb <sup>+</sup>	Si	Na <sup>+</sup>	Cl <sup>-</sup>	HCO <sub>3</sub> <sup>-</sup> <sub>b</sub>	SO <sub>4</sub> <sup>2-</sup>
	(km)	(°C)						(μmol/L)						
<b>S1</b>	0	18.3	80	8.42	109	5364	2592	742	351	377	2306	959	4023	6998
<b>W1</b>	10	15.4	-140	7.18	1617	399	329	153		135	6134	254	8535	
<b>W2</b>	22	13.7	-168	7.18	2418	798	617	179	59	132	10005	197	15187	
<b>W3</b>	30	19.2	-170	7.1	3277	973	700	256	105	150	10266	197	15725	
<b>W4</b>	48	21.7	-222	7.87	2.519	749	370	128		150	11919	197	17639	
<b>W5</b>	53	20.1	-170	7.64	3131	649	370	179	82	174	1131	200	15600	
<b>W6</b>	76	26	-161	7.46	3583	574	329	205	94	196	12789	200	18013	
<b>W7</b>	98	21.9	-154	7.6	3422	424	329	205	59	196	26797	508	33445	
<b>W8</b>	101	20.5	-166	7.62	2825	424	329	179		150	24056	480	30127	
<b>W9</b>	102	19.6	-165	7.98	2017	99	247	153	59	167	23317	423	30640	

<sup>a</sup> Reported relative to S1 after projecting the position of S1 due south to intersect the flowpath defined by W1 - W9 (Fig. 1). See text for explanation.

<sup>b</sup> HCO<sub>3</sub> ≈ A<sub>T</sub> = (HCO<sub>3</sub><sup>-</sup> + 2CO<sub>3</sub><sup>2-</sup>)